

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently Amended) A method of adjusting one or more communications with a receiving unit in a wireless communication network, the method comprising the steps of:

receiving feedback information relating to the receiving unit, the feedback information relating to radio conditions between the wireless communication network and the receiving unit;

determining a feedback information offset for the receiving unit by a feedback information processor located separately from the receiving unit; and

adjusting the one or more communications providing a downlink with the receiving unit based on the feedback information and the feedback information offset.

2. (Original) The method as recited in claim 1, wherein the receiving unit is a user equipment, a base station, or a device communicating with multiple user equipments.

3. (Original) The method as recited in claim 2, wherein the user equipment is a cordless phone, cellular phone, satellite phone, pager, computer, personal data assistant ("PDA"), entertainment device or wireless combined function device.

4. (Original) The method as recited in claim 1, wherein the feedback information comprises an acknowledgement ("ACK"), a negative acknowledgement ("NACK"), a channel quality indication ("CQI"), a discontinuous transmission ("DTX") bit or a communication metric.

5. (Original) The method as recited in claim 1, wherein the feedback information offset is a positive value whenever the feedback information for the receiving unit is underestimated and a negative value whenever the feedback information for the receiving unit is overestimated.

6. (Original) The method as recited in claim 1, wherein the feedback information offset comprises an initial value of zero, a value based on the receiving unit, a value based on a user profile associated with the receiving unit, a value based on historical data or a value based on one or more conditions of the wireless communication network.

7. (Original) The method as recited in claim 1, wherein the feedback information offset is not higher than a maximum value and is not less than a minimum value.

8. (Original) The method as recited in claim 1, wherein the feedback information offset comprises a communication link adaptation feedback information offset and a scheduling feedback information offset.

9. (Original) The method as recited in claim 1, wherein the wireless communication network is a WCDMA network or a CDMA2000 network.

10. (Original) The method as recited in claim 1, further comprising the step of setting the feedback information offset to an initial value.

11. (Original) The method as recited in claim 1, wherein the step of adjusting one or more communications with the receiving unit based on the feedback information and the feedback information offset comprises the steps of:

determining a load-based feedback information offset for the receiving unit; and

adjusting one or more communications with the receiving unit based on the feedback information, the feedback information offset and the load-based feedback information offset.

12. (Original) The method as recited in claim 1, wherein the step of determining the feedback information offset for the receiving unit comprises the steps of:

increasing the feedback information offset whenever the feedback information includes a negative acknowledgement ("NACK"); and

decreasing the feedback information offset whenever the feedback information includes an acknowledgement ("ACK").

13. (Original) The method as recited in claim 12, wherein the feedback information offset is increased or decreased in uniform increments, predetermined increments, scaled increments or calculated increments.

14. (Original) The method as recited in claim 13, wherein the increments depend on a fixed value, a value based on the receiving unit, a value based on a user profile associated with the receiving unit, a value based on historical data, a value derived from feedback information received from the receiving unit or a value based on one or more conditions of the wireless communication network.

15. (Original) The method as recited in claim 12, wherein the step of decreasing the feedback information offset whenever the feedback information includes an acknowledgement ("ACK") comprises the steps of:

leaving the feedback information offset unchanged whenever the feedback information includes an acknowledgement ("ACK") and the feedback information is not related to an initial transmission;

leaving the feedback information offset unchanged whenever the feedback information includes an acknowledgement ("ACK"), the feedback information is related to an initial transmission and a BLER is not greater than a desired value; and

decreasing the feedback information offset whenever the feedback information includes and acknowledgement ("ACK") and the BLER is greater than the desired value.

16. (Original) The method as recited in claim 1, wherein the step of determining the feedback information offset for the receiving unit comprises the steps of:

increasing the feedback information offset whenever an actual number and/or an average number of transmissions is less than a minimum limit; and

decreasing the feedback information offset whenever the actual number and/or average number of transmissions is greater than a maximum limit.

17. (Original) The method as recited in claim 1, wherein the step of adjusting one or more communications with the receiving unit based on the feedback information and the feedback information offset comprises the step of scheduling the one or more communications with the receiving unit using the feedback information and the feedback information offset.

18. (Original) The method as recited in claim 1, wherein the step of adjusting one or more communications with the receiving unit based on the feedback information and the feedback information offset comprises the step of adapting one or more communication links with the receiving unit using the feedback information and the feedback information offset.

19. (Original) The method as recited in claim 17, wherein the one or more communication links are adapted by changing a data rate, a channel modulation or a power level for the one or more communication links.

20. (Original) The method as recited in claim 1, wherein the step of adjusting one or more communications with the receiving unit based on the feedback information and the feedback information offset comprises the steps of:

determining whether adjust the scheduling of the one or more communications with the receiving unit using the feedback information offset;

scheduling the one or more communications with the receiving unit using the feedback information and the feedback information offset whenever the scheduling of the one or more communications with the receiving unit is to be adjusted using the feedback information offset;

scheduling the one or more communications with the receiving unit using the feedback information whenever the scheduling of the one or more communications with the receiving unit is not to be adjusted using the feedback information offset;

determining whether to adapt one or more communication links with the receiving unit using the feedback information offset;

adapting one or more communication links with the receiving unit using the feedback information and the feedback information offset whenever the one or more communication links with the receiving unit are to be adapted using the feedback information offset; and

adapting one or more communication links with the receiving unit using the feedback information whenever the one or more communication links with the receiving unit are not to be adapted using the feedback information offset.

21. (Original) The method as recited in claim 1, wherein the step of adjusting one or more communications with the receiving unit based on the feedback information and the feedback information offset comprises the steps of:

determining whether to use the feedback information offset or a previous feedback information offset;

adjusting the one or more communications with the receiving unit based on the feedback information whenever the feedback information offset is not to be used;

adjusting the one or more communications with the receiving unit based on the feedback information and the feedback information offset whenever the feedback information offset is to be used; and

adjusting the one or more communications with the receiving unit based on the feedback information and the previous feedback information offset whenever the previous feedback information offset is to be used.

22. (Original) The method as recited in claim 21, wherein a modified feedback information offset is used instead of the feedback information offset.

23. (Original) The method as recited in claim 22, wherein the modified feedback information offset has a value of zero, an absolute value of the feedback information offset or a negative of the absolute value of the feedback information offset.

24. (Currently Amended) A computer program embodied on a computer readable medium for adjusting one or more communications with a receiving unit in a wireless communication network, the computer program comprising:

a code segment for receiving feedback information relating to the receiving unit, the feedback information related to radio conditions between the wireless communication network and the receiving unit;

a code segment for determining a feedback information offset for the receiving unit, the code segment for determining a feedback information offset located separately from the receiving unit; and

a code segment for adjusting the one or more communications providing a downlink with the receiving unit based on the feedback information and the feedback information offset.

25. (Currently Amended) An apparatus for adjusting one or more communications with a receiving unit in a wireless communication network comprising:

a processor located separate from the receiving unit that accesses feedback information related to radio conditions between the wireless communication network and the receiving unit ~~to the receiving unit~~, determines a feedback information offset for the receiving unit and provides one or more instructions to adjust the one or more

communications providing a downlink with the receiving unit based on the feedback information and the feedback information offset.

26. (Currently Amended) An apparatus for adjusting one or more communications with a receiving unit in a wireless communication network comprising:

a receiver that receives feedback information ~~relating to the receiving unit, relating to radio conditions between the wireless communication network and the receiving unit;~~

a feedback information processor communicably coupled to the receiver, the feedback information processor located separate from the receiving unit, the feedback information processor determining a feedback information offset for the receiving unit and adjusting the one or more communications providing a downlink with the receiving unit based on the feedback information and the feedback information offset; and

a transmitter communicably coupled to the feedback information processor that transmits the one or more communications providing a downlink to the receiving unit.

27. (Original) The apparatus as recited in claim 26, wherein the receiver, the feedback information processor and the transmitter are part of a base station.

28. (Currently Amended) A system for adjusting one or more communications in a wireless communication network comprising:

one or more receiving units, each receiving unit comprising a receiver, a feedback information estimator communicably coupled to the receiver and a transmitter communicably coupled to the feedback information estimator;

one or more base stations communicably coupled to the one or more receiving unit, each base station comprising a receiver that receives feedback information relating to radio conditions between the wireless communication network and the receiving unit ~~relating to the receiving unit~~, a feedback information processor communicably coupled to the receiver and located separate from the receiving unit, the feedback information processor determining a feedback information offset for the receiving unit and adjusting the one or more communications with the receiving unit based on the feedback

information and the feedback information offset, and a transmitter communicably coupled to the feedback information processor that transmits the one or more communications providing a downlink to the receiving unit.

29. (Original) The system as recited in claim 28, further comprising a transmit processing node communicably coupled to the one or more base stations.

30. (Original) The system as recited in claim 29, wherein the transmit processing node is a radio network controller.

31. (Original) The system as recited in claim 29, further comprising an interface/routing node communicably coupled to the transmit processing node.

32. (Original) The system as recited in claim 31, wherein the interface/routing node is a mobile switching center or public data.